

# W H E A T   S T U D I E S

*of the* FOOD RESEARCH INSTITUTE

VOL. XVII, NO. 3

(Price \$1.

NOVEMBER 1940

## PRICE RELATIONS OF LIVERPOOL WHEAT FUTURES WITH SPECIAL REFERENCE TO THE DECEMBER-MARCH SPREAD

*Sidney Hoos and Holbrook Working*

The influences that may affect price relations between different wheat futures in a great importing market differ in many respects from those affecting price relations in such a market as Chicago. General similarities which appear despite such differences are especially significant, for they point to characteristics of futures markets that are not dependent on special conditions in a particular market.

At Liverpool, as at Chicago, price influences which might seem significant principally for deferred futures are found in fact to have nearly or quite as much effect on the near future. Expectations of subsequent developments are reflected in prices of all futures about equally. Price differences between futures arise mainly from conditions and expectations that have greater price significance for the near future than for the deferred future.

The price spread between the December and the March futures at Liverpool appears to have depended mainly on conditions that tend to determine the level of European stocks of imported wheat at about the end of December. Among these conditions have been the pressure of export surpluses during the previous crop year, affecting European stocks in early August, and the various factors that determine what proportion of the current crop year's shipments to Europe will be made during August-November. The December-March spread as early as September implies a forecast of shipments during the autumn. As such, it has been reasonably trustworthy, but it has tended to underestimate the force of extreme conditions, with the result that unusually wide spreads have tended to widen as the season progressed. The influences affecting the December-March spread tend in August-October to bear principally on the price of the December future, but to affect the March future in the same direction. In November and December they tend to affect only the price of the December future.

STANFORD UNIVERSITY, CALIFORNIA

**WHEAT STUDIES**  
**OF THE**  
**FOOD RESEARCH INSTITUTE**

Entered as second-class matter February 11, 1925, at the Post Office at Palo Alto, Stanford University Branch, California, under the Act of August 24, 1912.

Published eight times a year by Stanford University for the Food Research Institute.

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# APPENDIX TABLES

**TABLE I.—UNITED KINGDOM PORT STOCKS AND DECEMBER-MARCH SPREADS AT LIVERPOOL, 1891-1914 AND 1921-39\***

Crop year	Port stocks (thousand bushels)				Spread* (pence per cental)			Percentage spread, Nov. 1 <sup>b</sup>
	Oct. 1	Nov. 1	Dec. 1	Jan. 1	Oct. 1	Nov. 1	Dec. 1	
1891-92.....	14,000	15,200	20,000	22,700	+1.9	+1.2	+2.6	+1.17
1892-93.....	27,000	26,300	27,900	28,300	+2.4	+2.9	+3.2	+4.10
1893-94.....	29,200	30,800	28,600	29,000	+3.0	+3.0	+2.7	+4.59
1894-95.....	23,600	22,400	15,900	16,300	+1.5	+1.5	+ .5	+2.84
1895-96.....	28,000	25,200	22,640	19,880	+1.8	+1.0	+2.1	+1.54
1896-97.....	11,200	10,100	12,000	14,400	+ .5	- .5	+ .3	- .62
1897-98.....	7,300	8,680	11,520	11,120	- .2	- .3	+ .3	- .33
1898-99.....	7,330	7,280	8,560	8,040	- .1	-2.0	-2.9	-2.74
1899-1900...	18,520	17,920	19,680	19,440	+1.6	+1.3	+2.4	+1.84
1900-01.....	20,070	22,400	22,000	20,320	+ .7	+1.3	+1.3	+1.81
1901-02.....	20,810	20,000	20,420	17,490	+1.5	+1.4	+1.5	+2.05
1902-03.....	12,960	15,600	16,480	14,840	+ .3	+ .9	+ .9	+1.28
1903-04.....	15,340	17,920	19,560	20,150	+ .2	.0	- .5	.00
1904-05.....	18,820	22,400	24,000	24,310	+1.5	+1.3	+2.2	+1.48
1905-06.....	23,950	21,440	20,000	19,340	- .7	.0	+ .1	.00
1906-07.....	24,640	22,400	21,120	20,510	+ .4	+ .5	+2.1	+ .65
1907-08.....	21,760	22,520	21,160	20,750	+1.0	+1.6	+3.0	+1.60
1908-09.....	16,400	15,720	14,960	14,440	-1.6	-1.5	-2.6	-1.60
1909-10.....	14,990	14,040	12,600	13,790	+ .6	-2.5	-5.4	-2.66
1910-11.....	20,550	20,720	22,720	22,680	+ .1	+1.0	+2.6	+1.22
1911-12.....	16,810	14,360	16,200	17,630	- .5	- .8	- .8	- .91
1912-13.....	13,560	15,320	16,400	16,640	-1.4	- .9	- .1	- .98
1913-14.....	18,960	19,040	17,520	15,700	+1.4	+1.2	+2.4	+1.43
1921-22.....	9,870	12,450	11,050	8,840	+ .2	- .6	-3.6	- .50
1922-23.....	6,320	4,160	4,480	5,880	-2.0	-6.9	-7.6	-5.56
1923-24.....	9,280	8,880	7,760	8,480	- .6	-1.8	-2.9	-1.71
1924-25.....	12,320	12,500	14,360	17,280	- .3	+ .6	+2.6	+ .41
1925-26.....	5,120	5,720	3,760	6,160	- .8	-5.2	-6.1	-4.07
1926-27.....	5,340	3,760	3,600	4,760	-2.1	-8.8	-8.0	-6.28
1927-28.....	9,960	8,640	9,600	8,000	- .5	+ .4	- .4	+ .33
1928-29.....	7,800	5,920	5,680	6,200	+1.1	- .2	+ .8	- .18
1929-30.....	11,440	16,760	20,560	16,840	+6.4	+7.0	+7.7	+6.39
1930-31.....	9,040	9,960	13,920	19,720	+1.4	.0	+2.7	.00
1931-32.....	22,080	28,960	29,520	23,880	+3.3	+3.3	+4.3	+4.59
1932-33.....	7,600	8,840	7,600	7,520	+ .7	-1.8	-2.6	-2.93
1933-34.....	13,200	16,760	17,240	19,120	+2.2	+3.3	+3.2	+5.99
1934-35.....	15,120	13,960	14,760	16,120	+3.2	+3.9	+4.8	+6.52
1935-36.....	5,920	6,240	8,800	10,760	-3.5	-3.7	-3.1	-5.00
1936-37.....	6,120	7,200	7,400	9,000	-5.9	-4.4	-6.2	-4.61
1937-38.....	9,760	10,160	10,340	13,000	-4.5	-4.4	- .7	-4.35
1938-39.....	16,440	17,640	19,080	19,120	-2.0	+ .6	+ .1	+ .01

\* Stocks, 1891-1924, compiled from Broomhall's *Corn Trade News* and *Chicago Daily Trade Bulletin*; based on a joint compilation of Broomhall's, *The Daily Market Record* (Minneapolis), and the *Daily Trade Bulletin* (Chicago). Stocks, 1925-36, compiled from *Corn Trade News*. Stocks include wheat and flour. Weekly price spreads from WHEAT STUDIES, November 1938, XV, 157-80. Monthly prices and spread computed from *ibid.*, pp. 153-56.

\* Average for first week ending in the month indicated.

<sup>b</sup> Spread as percentage of average price of December future during first week ending in November.

## PRICE RELATIONS OF LIVERPOOL WHEAT FUTURES

TABLE II.—STATISTICS OF "WORLD" WHEAT SUPPLIES, FROM 1922\*

(Million bushels)

Crop year	Initial stocks (about August 1)								Production			Aug.-Dec. supplies <sup>d</sup>
	United States grain <sup>a</sup>	Canadian grain <sup>b</sup>	Total North America <sup>c</sup>	Australia	Argentina	Total Australia and Argentina	Four chief exporters	"World"	Northern Hemisphere <sup>e</sup>	Australia and Argentina	"World" <sup>e</sup>	
1922-23..	107	28	135	24	62	86	221	547	2,794	305	3,145	3,341
1923-24..	134	23	157	33	60	93	250	491	3,034	373	3,458	3,525
1924-25..	137	48	185	34	66	100	285	609	2,668	356	3,071	3,277
1925-26..	111	31	142	28	58	86	228	475	2,958	306	3,315	3,433
1926-27..	101	40	141	24	67	91	232	546	2,929	391	3,369	3,475
1927-28..	111	56	167	35	70	105	272	590	3,126	400	3,587	3,716
1928-29..	115	91	206	36	95	131	337	651	3,338	509	3,905	3,989
1929-30..	232	127	359	40	130	170	529	911	3,072	289	3,426	3,983
1930-31..	294	127	421	48	65	113	534	874	3,213	446	3,704	4,087
1931-32..	329	139	468	60	80	140	608	925	3,218	410	3,681	4,143
1932-33..	391	136	527	48	65	113	640	951	3,234	455	3,744	4,185
1933-34..	382	218	600	55	75	130	730	1,118	3,101	463	3,635	4,219
1934-35..	274	203	477	84	118	202	679	1,188	2,900	374	3,337	4,088
1935-36..	147	214	361	57	85	142	503	939	3,029	286	3,394	3,968
1936-37..	142	127	269	43	60	103	372	752	2,841	401	3,303	3,593
1937-38..	83	37	120	41	45	86	206	512	3,146	395	3,605	3,658
1938-39..	153	25	178	50	72	122	300	593	3,727	523	4,323	4,320
1939-40..	253	103	356	50	230	280	636	1,157	3,563	330	3,958	4,720

\* Data on stocks from WHEAT STUDIES, October 1939, XVI, 66. Data on production as in WHEAT STUDIES, December 1939, XVI, 183.

<sup>a</sup> United States data as of July 1; including United States grain in Canada.

<sup>b</sup> Including Canadian grain in the United States.

<sup>c</sup> Northern Hemisphere excludes China, USSR, Turkey,

Manchukuo, Syria and Lebanon, Palestine, and Cyprus.

"World" excludes also Brazil and Peru.

<sup>e</sup> "World" initial stocks plus Northern Hemisphere production.

TABLE III.—SHIPMENTS OF WHEAT AND FLOUR TO EUROPE, FROM 1922\*

Crop year	Million bushels			Percentage of August-July	
	Aug.-Nov.	Dec.-Feb.	Aug.-July	Aug.-Nov.	Dec.-Feb.
1922-23....	197.60	149.92	584.4	33.81	25.65
1923-24....	189.34	152.21	633.9	29.87	24.01
1924-25....	232.60	166.40	630.2	36.91	26.40
1925-26....	170.81	136.11	530.2	32.22	25.67
1926-27....	200.63	190.51	683.5	29.35	27.87
1927-28....	228.61	167.32	664.9	34.38	25.16
1928-29....	243.22	181.10	693.9	35.05	26.10
1929-30....	175.67	108.24	483.5	36.33	22.39
1930-31....	233.39	125.27	609.6	38.29	20.55
1931-32....	216.03	126.67	583.6	37.02	21.70
1932-33....	150.36	125.46	450.5	33.38	27.85
1933-34....	143.51	97.10	402.9	35.62	24.10
1934-35....	141.17	85.68	375.6	37.59	22.81
1935-36....	124.85	93.65	359.3	34.75	26.06
1936-37....	147.13	134.38	477.9	30.79	28.12
1937-38....	132.13	109.31	410.2	32.21	26.65
1938-39....	163.65	99.72	453.5	36.09	21.99

\* Compiled from Broomhall's weekly statistics of shipments, adjusted to calendar months, as in WHEAT STUDIES, March 1939, XV, 330.

TABLE IV.—COEFFICIENTS OF CORRELATION BETWEEN WEEKLY CHANGES IN PRICES OF DECEMBER AND MARCH FUTURES, AND RELATED DATA\*

Month	Coefficient			Number of weekly changes		
	Class A	Class B	Class C	Class A	Class B	Class C
Aug. ...	+ .993	+ .959	+ .997	6	17	29
Sept. ...	+ .981	+ .981	+ .985	15	31	33
Oct. ...	+ .931	+ .977	+ .990	36	45	28
Nov. ...	+ .879	+ .969	+ .971	42	31	42
Dec. ...	+ .935	+ .845	+ .970	43	16	39
95 per cent confidence limits, lower and upper <sup>a</sup>						
	Class A		Class B		Class C	
Aug. ...	+ .935	+ .999	+ .887	+ .985	+ .934	+ .999
Sept. ...	+ .942	+ .994	+ .961	+ .991	+ .970	+ .993
Oct. ...	+ .868	+ .965	+ .958	+ .987	+ .978	+ .995
Nov. ...	+ .785	+ .934	+ .936	+ .985	+ .946	+ .984
Dec. ...	+ .883	+ .965	+ .601	+ .945	+ .943	+ .984

\* Classification of prices and spreads as in Table V.

<sup>a</sup> Correlation coefficients corresponding to  $x \pm 2\sigma$ ,  $z$  being the transformed correlation coefficient (see R. A. Fisher, *Statistical Methods for Research Workers*, 7th ed., London, 1938, p. 203).

TABLE V.—STANDARD DEVIATIONS OF WEEKLY CHANGES IN PRICES OF DECEMBER AND MARCH FUTURES AND OF DECEMBER-MARCH SPREAD AT LIVERPOOL, BY MONTHS AND SPREAD CLASSES\*

(Pence per cental)

Month	December future price				March future price				December-March spread			
	Class A	Class B	Class C	All classes	Class A	Class B	Class C	All classes	Class A	Class B	Class C	All classes
Aug. ....	3.217	1.869	2.999	2.725	2.932	1.676	2.982	2.628	0.370	0.548	0.237	0.396
Sept. ...	2.351	1.866	2.239	2.165	2.037	1.803	2.259	2.066	0.544	0.361	0.318	0.422
Oct. ....	2.416	2.800	2.330	2.673	1.720	2.787	2.172	2.381	1.052	0.605	0.356	0.783
Nov. ....	2.316	1.358	2.655	2.318	2.256	1.228	2.744	2.260	1.098	0.373	0.543	0.831
Dec. ....	2.804	0.573	2.098	2.357	2.413	0.571	2.062	2.129	1.039	0.298	0.478	0.771

\* Weeks were classified according to the following criteria: A: Weeks of large negative spread; March wheat at least 1d. under December. B: Weeks of small spread; March wheat less than 1d. under or over December. C: Weeks of large positive spread; March wheat at least 1d. over December. Data for 1903-13 and 1921-36.

TABLE VI.—AVERAGES, BY WEEKS, OF DECEMBER FUTURE PRICE AND DECEMBER-MARCH SPREAD AT LIVERPOOL, BY GROUPS OF YEARS\*

Average date*	Price (shillings and pence per cental)					Spread (pence per cental)			
	Group I	Group II	Group III	Group IV	All years	Group I	Group II	Group III	Group IV
July 6.....	7 8.6	8 7.2	7 5.1	6 3.4	7 7.7	+0.70	-1.30	....	+2.00
13.....	7 10.2	8 5.5	7 3.9	6 4.1	7 7.4	+0.60	-1.00	....	+2.03
20.....	8 0.4	8 7.0	7 3.6	6 8.0	7 8.9	-1.25	-0.70	....	+1.80
27.....	8 0.5	8 6.9	7 3.4	6 7.8	7 8.8	-1.40	-0.60	+1.80	+2.22
Aug. 3.....	8 1.9	8 6.9	7 2.8	6 8.7	7 9.1	-1.55	-0.60	+1.10	+2.32
10.....	8 4.2	8 7.0	7 2.1	6 6.9	7 9.1	-1.95	-0.45	+1.15	+2.32
17.....	8 2.9	8 6.6	7 1.6	6 4.6	7 9.1	-1.85	-0.25	+1.30	+2.40
24.....	3 3.2	8 6.9	7 1.6	6 4.7	7 9.3	-2.10	-0.32	+1.00	+2.60
31.....	8 2.9	8 5.6	7 2.2	6 4.1	7 7.9	-1.93	+0.20	+1.00	+2.82
Sept. 7.....	8 2.7	8 5.9	7 2.3	6 4.1	7 9.0	-1.76	+0.37	+1.06	+3.05
14.....	8 4.2	8 5.1	7 1.0	6 3.3	7 7.5	-1.66	+0.42	+1.08	+3.10
21.....	8 6.7	8 5.9	7 1.6	6 0.6	7 8.0	-2.18	+0.01	+0.80	+3.47
28.....	8 7.2	8 6.5	7 1.3	6 0.9	7 8.3	-2.54	-0.23	+0.96	+3.78
Oct. 5.....	8 7.0	8 8.0	7 1.4	5 11.5	7 8.5	-2.78	-0.19	+0.54	+3.78
12.....	8 7.3	8 9.5	7 2.2	6 0.3	7 9.4	-2.60	-0.71	-0.01	+3.72
19.....	8 9.1	8 9.2	7 1.5	5 11.8	7 9.4	-3.38	-0.60	-0.04	+3.95
26.....	8 10.8	8 7.9	7 1.3	5 10.6	7 9.1	-4.44	-0.46	0.00	+4.18
Nov. 2.....	8 10.8	8 7.4	7 1.3	6 0.0	7 9.2	-4.60	-0.34	+0.06	+4.18
9.....	8 10.1	8 7.7	7 0.0	6 3.3	7 9.3	-4.76	-0.60	+0.13	+4.50
16.....	8 10.7	8 8.9	6 11.2	5 9.7	7 8.6	-4.70	-0.34	+0.49	+4.75
23.....	8 11.2	8 9.1	6 10.4	5 10.3	7 8.6	-4.18	-0.44	+0.76	+4.82
30.....	9 1.3	8 8.6	6 10.2	5 9.2	7 8.6	-4.44	-0.37	+1.20	+5.15
Dec. 7.....	9 4.5	8 8.3	6 9.0	5 10.9	7 9.2	-5.20	-0.59	+1.24	+4.92
14.....	9 6.5	8 9.1	6 6.1	5 9.6	7 11.0	-5.74	-0.74	-0.15	+4.38
21.....	9 6.4	8 10.0	6 4.3	5 8.2	7 10.6	-5.90	-0.66	+0.12	+4.28
28.....	8 10.4	8 4.9	6 3.5	6 4.3	7 7.3	-6.70	-1.14	-0.05	+4.13

\* Years grouped according to spread in September; see above, p. 127.

\* The average date was selected as the date around which the weeks centered. For example, all weeks ending between October 2 and October 8 were dated as of October 5.

## PRICE RELATIONS OF LIVERPOOL WHEAT FUTURES

TABLE VII.—COEFFICIENTS OF CORRELATION AND REGRESSION BETWEEN WEEKLY CHANGES IN PRICES AND IN THE DECEMBER-MARCH SPREAD\*

Month	Class A	Class B	Class C	All classes	Class A	Class B	Class C	All classes
	CORRELATION OF SPREAD AND DECEMBER FUTURE ( $r_{SD}$ )				CORRELATION OF SPREAD AND MARCH FUTURE ( $r_{SM}$ )			
Aug. ....	- .794 ± .304	-.481 ± .226	-.111 ± .191	-.313 ± .134	-.575 ± .409	-.218 ± .252	-.070 ± .192	-.177 ± .139
Sept. ....	-.654 ± .210	-.267 ± .179	-.007 ± .180	-.327 ± .108	-.550 ± .232	-.081 ± .185	+.103 ± .179	-.132 ± .113
Oct. ....	-.784 ± .107	-.129 ± .151	-.507 ± .169	-.498 ± .084	-.565 ± .142	+.107 ± .152	-.388 ± .181	-.211 ± .094
Nov. ....	-.291 ± .151	-.471 ± .164	+.064 ± .158	-.249 ± .091	+.133 ± .157	-.270 ± .179	+.190 ± .155	+.111 ± .093
Dec. ....	-.535 ± .132	-.266 ± .259	-.190 ± .161	-.445 ± .091	-.146 ± .155	+.245 ± .259	+.089 ± .164	-.136 ± .101
	REGRESSION OF DECEMBER FUTURE ON SPREAD ( $b_{DS}$ )				REGRESSION OF SPREAD ON DECEMBER FUTURE ( $b_{SD}$ )			
Aug. ....	-6.90 ± 2.64	-1.64 ± .77	-1.41 ± 2.42	-2.16 ± .93	-.091 ± .035	-.141 ± .066	-.009 ± .015	-.046 ± .020
Sept. ....	-2.82 ± .91	-1.38 ± .92	-.05 ± 1.26	-1.68 ± .55	-.151 ± .049	-.052 ± .035	-.001 ± .026	-.064 ± .021
Oct. ....	-1.80 ± .24	-.60 ± .70	-3.32 ± 1.11	-1.70 ± .29	-.341 ± .046	-.028 ± .033	-.077 ± .026	-.146 ± .024
Nov. ....	-.61 ± .32	-1.71 ± .60	+.31 ± .77	-.70 ± .25	-.138 ± .072	-.129 ± .045	+.013 ± .032	-.090 ± .033
Dec. ....	-1.44 ± .35	-.51 ± .49	-.83 ± .71	-1.36 ± .28	-.198 ± .049	-.139 ± .134	-.043 ± .037	-.146 ± .030

\* Classification of prices and spread as noted in Table V. Two other sets of regression coefficients are readily obtainable from those here tabulated, since  $b_{MS} = b_{DS} + 1$ , and  $b_{MD} = b_{SD} + 1$ .

TABLE VIII.—PRICES OF LIVERPOOL WHEAT FUTURES, MONTHLY, SEPTEMBER 1938 TO AUGUST 1939\*  
(Shillings and pence per cental)

Month	Old contract*					New contract				
	Mar.	May	July	Oct.	Dec.	Mar.	May	July	Oct.	Dec.
Sept. ....	4 10.4	.....	.....	5 1.8	4 11.4	.....	.....	.....	.....	.....
Oct. ....	4 7.3	.....	.....	4 10.8	4 8.0	.....	.....	.....	.....	.....
Nov. ....	4 5.4	4 5.9	.....	.....	4 5.0	.....	.....	.....	.....	.....
Dec. ....	4 7.0	4 7.7	.....	.....	4 8.6	4 4.1	4 5.0	.....	.....	.....
Jan. ....	4 8.6	4 8.7	.....	.....	.....	4 5.5	4 6.2	4 7.3	.....	.....
Feb. ....	4 6.7	4 7.7	.....	.....	.....	4 3.8	4 5.3	4 6.8	.....	.....
Mar. ....	4 3.8	4 5.0	.....	.....	.....	4 1.9	4 3.2	4 4.8	.....	.....
Apr. ....	.....	4 4.7	.....	.....	.....	.....	4 2.4	4 4.2	4 6.1	.....
May ....	.....	4 6.9	.....	.....	.....	.....	4 3.3	4 5.1	4 7.2	.....
June ....	.....	.....	.....	.....	.....	.....	.....	4 .3	4 3.6	4 5.3
July ....	.....	.....	.....	.....	.....	.....	.....	3 7.9	3 11.1	4 1.2
Aug. ....	.....	.....	.....	.....	.....	4 1.1	.....	.....	3 9.4	3 11.3

\* Averages of daily prices from *London Grain, Seed and Oil Reporter*. For similar data, May 1886 to August 1938, see WHEAT STUDIES, November 1938, XV, 153-56.

\* Removal of the duty on non-Empire wheats, announced Nov. 17, 1938, to take effect Jan. 1, 1939, had the effect of permitting buyers taking delivery on old March and May contracts to deduct 5d. per cental from the purchase price if non-Empire wheat was delivered. These two futures became in a sense contracts for delivery of Australian wheat, while on new contracts delivery of Argentine wheat was expected.

TABLE IX.—PRICES OF LIVERPOOL WHEAT FUTURES AND INTER-OPTION SPREADS, WEEKLY, SEPTEMBER 1938 TO AUGUST 1939

Week ending	Prices, old contract*					Spreads, old contract*					Week ending	Prices, new contract					Spreads, new contract						
	Mar.	May	July	Oct.	Dec.	Mar.-May	May-July	July-Oct.	Oct.-Dec.	Dec.-Mar.		Mar.	May	July	Oct.	Dec.	Mar.-May	May-July	July-Oct.	Oct.-Dec.	Dec.-Mar.		
Sept. 8	4 9.5			5 1.6	4 11.4				-2.2	-1.9	Sept. 8												
10	4 8.3			4 9.6	4 8.3				-1.3	.0	10												
17	4 10.9			5 1.4	4 11.4				-2.0	-.6	17												
24	4 11.2			5 3.5	5 .5				-3.0	-1.3	24												
Oct. 1	4 11.6			5 4.9	5 1.6				-3.3	-2.0	Oct. 1												
8	4 7.3			5 .4	4 8.9				-3.5	-1.1	8												
15	4 7.7			5 1.4	4 8.9				-4.5	-1.2	15												
22	4 7.6	4 7.8		4 11.2	4 8.3	+ 2			-3.9	-.7	22												
29	4 6.4	4 6.5		4 6.5	4 6.3	+ 1			-.2	+ 1	29												
Nov. 5	4 4.7	4 4.8			4 4.1	+ 1				+ .6	Nov. 5												
12	4 4.7	4 5.0			4 4.1	+ 3				+ .6	12												
19	4 5.6	4 6.3			4 5.6	+ 7				.0	19												
26	4 6.1	4 6.6			4 5.8	+ 5				+ .3	26	4 8.5	4 4.2			+ .7							
Dec. 3	4 6.5	4 7.3			4 6.4	+ 3				+ 1	Dec. 3	4 8.4	4 4.2			+ .8							
10	4 7.7	4 8.2			4 8.6	+ 5				-.9	10	4 4.3	4 5.1			+ .8							
17	4 6.7	4 7.1			4 8.4	+ 4				-1.7	17	4 8.8	4 4.4			+ .6							
24	4 6.1	4 6.9			4 8.4	+ 8				-2.3	24	4 3.8	4 4.8			+1.0							
31	4 8.4	4 9.2			4 11.0	+ 8				-2.6	31	4 5.5	4 6.8			+1.3							
Jan. 7	4 8.9	4 8.9				.0					Jan. 7	4 5.6	4 6.6	4 7.6		+1.0	+1.0						
14	4 8.0	4 7.9				-.1					14	4 4.7	4 5.6	4 6.9		+ .9	+1.8						
21	4 8.2	4 8.2				.0					21	4 5.3	4 6.0	4 6.9		+ .7	+ .9						
28	4 9.4	4 9.6				+ 2					28	4 6.3	4 6.8	4 7.8		+ .5	+1.0						
Feb. 4	4 8.8	4 9.0				+ 2					Feb. 4	4 5.2	4 6.0	4 7.2		+ .8	+1.2						
11	4 7.4	4 7.9				+ 5					11	4 4.0	4 5.2	4 6.7		+1.2	+1.5						
18	4 6.8	4 7.8				+1.0					18	4 8.8	4 5.4	4 6.9		+1.6	+1.5						
25	4 5.3	4 6.9				+1.6					25	4 3.4	4 5.0	4 6.7		+1.6	+1.7						
Mar. 4	4 4.5	4 6.2				+1.7					Mar. 4	4 2.8	4 4.6	4 5.9		+1.8	+1.3						
11	4 3.7	4 5.1				+1.4					11	4 1.8	4 3.1	4 4.7		+1.3	+1.6						
18	4 3.6	4 4.9				+1.3					18	4 1.6	4 2.9	4 4.6		+1.3	+1.7						
25	4 3.6	4 4.8				+1.2					25	4 1.7	4 2.9	4 4.6		+1.2	+1.7						
Apr. 1		4 4.6									Apr. 1		4 2.9	4 4.6			+1.7						
8		4 3.9									8		4 2.0	4 3.4	4 5.3		+1.4	+1.9					
15		4 4.3									15		4 2.1	4 4.1	4 5.8		+2.0	+1.7					
22		4 5.4									22		4 2.8	4 4.6	4 6.6		+1.8	+2.0					
29		4 4.8									29		4 2.2	4 4.3	4 6.4		+2.1	+2.1					
May 6		4 6.5									May 6		4 3.8	4 5.9	4 7.7		+2.1	+1.8					
13		4 7.0									13		4 3.4	4 5.5	4 7.4		+2.1	+1.9					
20		4 7.2									20		4 3.3	4 5.0	4 7.0		+1.7	+2.0					
27		4 6.9									27		4 3.0	4 4.4	4 6.8	4 7.9	+1.4	+2.4	+1.1				
June 3											June 3			4 8.8	4 6.8	4 7.9			+3.0	+1.1			
10											10			4 1.5	4 4.6	4 6.3			+3.1	+1.7			
17											17			4 2	4 3.4	4 5.2			+3.2	+1.8			
24											24			3 10.9	4 2.4	4 4.2			+3.5	+1.8			
July 1											July 1			3 10.8	4 2.4	4 4.3			+3.6	+1.9			
8											8			3 10.1	4 1.8	4 3.3			+3.7	+2.0			
15											15			3 8.6	3 11.8	4 1.9			+3.2	+2.1			
22											22			3 6.4	3 9.4	3 11.6			+3.0	+2.2			
29											29	4 1.4		3 6.0	3 8.3	3 11.1			+2.8	+2.3	+2.3		
Aug. 5											Aug. 5	4 2.2			3 10.2	4 .2				+2.0	+2.0		
12											12	4 1.2			3 8.5	3 10.8				+2.3	+2.4		
19											19	3 11.9			3 7.5	3 9.7				+2.2	+2.2		
26											26	4 1.4			3 10.6	4 .1				+1.5	+1.3		

\* Weekly averages in shillings and pence per cental, from *London Grain, Seed and Oil Reporter*. For similar data, May 1886 to August 1938, see WHEAT STUDIES, November 1938, XV, 157-80 (for September 1938, some of the previously published averages were incorrect).

\* See Table VIII, footnote a.

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